

REMARKS

Claim 6 and 19 have been cancelled, claims 20 and 21 have been withdrawn and claims 1-5, 7 and 18 have been amended. Thus, claims 1-5, 7-18 and 22-25 are now pending in the present application. No new matter has been added. In view of the above amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

In the Advisory Action of January 30, 2006, the Examiner stated that the Rule 116 amendment to claim 1 was not entered, because it may have introduced new matter by using the terms "within the fibers" and "elemental zinc." Applicants respectfully submit that both of these terms are supported by the specification. Support for the term "within the fibers" is found in the following excerpts from the specification:

Surprisingly, it has now been found that the incorporation of, especially nanosized, metal particles and/or a cyclodextrin material *into* fibers creates a 'reactive' material which may have excellent malodor scavenging properties. *Specification*, p. 6, lines 19-21 (emphasis supplied).

In another important aspect of the invention, such metal particles and/or cyclodextrin materials are comprised *inside* of said fibers. *Id.* at p. 7, lines 7-8 (emphasis supplied).

In another important aspect of the invention, said metal particles and/or cyclodextrin materials are dispersed *throughout* said fibers. *Id.* at p. 7, lines 8-9 (emphasis supplied).

The invention includes a method of producing such fibers, which comprises *incorporating* such metal particles and/or cyclodextrin materials in the fibers when the fibers are produced. *Id.* at p. 7, lines 12-13 (emphasis supplied).

Support for the term "elemental zinc" is exhibited in the statement that "the zinc or other metal particles are essentially free of corresponding oxides." *Id.* at p. 8, lines 9-10. Additionally, the specification states that "it may be advantageous to use zinc particles i.e. particles substantially consisting of metallic zinc, in unreacted form." *Id.* at p. 8, lines 6-7. While it is respectfully submitted that one of skill in the art would understand the characteristics of

“essentially free of corresponding oxides” and “metallic zinc, in unreacted form” to be indicative of elemental zinc, applicants have removed the descriptor “elemental” from claim 1.

Therefore, applicants respectfully submit that no new matter has been added by the amendments submitted herein.

Claim 11 stands objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 1 has been amended to articulate that the weight percentage recited in claim 1 applies to the particles of elemental zinc, and not the cyclodextrin material, the weight percentage of which is provided in claim 11. Thus, applicants respectfully request that the objection to claim 11 be withdrawn.

Claims 1-5, 7-19 and 22-25 stand rejected under 35 U.S.C. § 112, first paragraph. Claims 2-5, 7 and 18 stand rejected under 35 U.S.C. § 112, second paragraph. In view of the amendments made to claims 1-5, 7 and 18 and the cancellation of claim 19, it is respectfully requested that all of the rejections of claims 1-5, 7-18 and 22-25 under 35 U.S.C. § 112 be withdrawn.

Claims 1-5, 7-11, 13, 16-19 and 22-25 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,429,628 to Trinh et al. (“Trinh”).

As amended, claim 1 recites a fiber material having improved malodor scavenging properties comprising fibers and “*dispersed within the fibers*, an effective malodor scavenging amount of at least one of (i) particles of zinc, wherein the amount of particles of zinc in the fiber material is in the range from about 0.015 to 1 wt.-%, based on the fiber material, and wherein the particles of zinc are essentially free of corresponding oxides and (ii) a cyclodextrin material wherein the cyclodextrin is free of an inclusion complex compound and the cyclodextrin comprises an  $\alpha$ -cyclodextrin, a  $\beta$ -cyclodextrin, a  $\gamma$ -cyclodextrin or mixtures thereof, having pendant moieties or substituents that render the cyclodextrin compatible with the fiber material.”

In contrast, Trinh discloses adhering/attaching cyclodextrin to a fiber's surface as a coating after the fiber has been manufactured. Accordingly, one main difference between the present invention and Trinh et al. is that, according to the present invention, compatible cyclodextrin is dispersed into the fiber material before the fibers are produced, while, according to Trinh et al., the cyclodextrin is coated onto a hydrophobic fiber after the fiber is produced. As a consequence, Trinh et al. does not disclose fibers with cyclodextrin dispersed therein, let alone with compatible cyclodextrin materials. Thus, it is respectfully submitted that claim 1 is allowable. Because claims 2-5, 7-11, 13, 16-18 and 22-25 depend from, and, therefore include all of the limitations of claim 1, it is respectfully submitted that these claims are also allowable.

Claims 1-3, 7-8, 11-16, 18, 22 and 25 stand rejected under 35 U.S.C. § 102(b) as anticipated by JP 55-115440 to Otani et al. ("Otani").

Otani refers to the incorporation of "a zinc powder" into acrylonitrile fibers. It is respectfully submitted that the zinc powder disclosed in Otani is not zinc which is free of corresponding oxides (i.e., elemental/reactive zinc) as recited in claim 1 of the present invention. Initially, it should be noted that Otani teaches to incorporate the zinc powder as a filler. *Otani*, p. 1. Otani further states that the zinc powder is incorporated into the acrylonitrile polymer article at an amount of up to 30 wt.-%. *Otani*, p. 2. One of skill in the art would understand that the incorporation of 30 wt.-% of highly reactive metal powder (i.e., zinc free of corresponding oxides) is practically impossible. In contrast, claim 1 of the present invention states that the maximum amount of zinc is approximately 1 wt.-%.

Furthermore, Otani states that the zinc powder exhibits "excellent antifungal and antibacterial effects." *Otani*, p. 2. Those of skill in the art know that the antifungal properties and antibacterial effects/properties are achieved by using or applying zinc ions. As a consequence, the zinc powder used in Otani refers to zinc salts, not zinc particles free of corresponding oxides as recited in claim 1. That is, the zinc powder in Otani refers to oxides, hydroxides and other ionic salts of zinc, since zinc ions are responsible for the antimicrobial properties allegedly achieved in Otani. Additionally, Otani does not disclose or suggest that the zinc is "*in the range from about 0.015 to 1 wt.-%*" as recited in claim 1.

Therefore, applicants respectfully submit that Otani neither discloses nor suggests "*dispersed within the fibers, an effective malodor scavenging amount of at least one of (i) particles of zinc, wherein the amount of particles of zinc in the fiber material is in the range from about 0.015 to 1 wt.-%, based on the fiber material, and wherein the particles of zinc are essentially free of corresponding oxides,*" as recited in claim 1. Because claims 2-3, 7-8, 11-16, 18, 22 and 25 depend from, and, therefore include all of the limitations of claim 1, it is respectfully submitted that these claims are also allowable.

Claim 12 stands rejected under 35 U.S.C. § 102(b) or § 103(a) as anticipated by, or obvious in view of, Trinh. The Examiner states that Trinh does not teach the limitation of low moisture content, but it is reasonable to presume that this limitation is inherent to the invention.

Applicants respectfully disagree with the Examiner's assertion. Those of skill in the art know that all cyclodextrins are, to some extent, hygroscopic. Water may be bound via hydrogen bonding to the primary and secondary hydroxyl groups at both openings of the cavity of the cyclodextrin molecule. Cyclodextrins will form crystal lattices with water from the atmosphere. Alpha-, beta- and gamma-cyclodextrin forms crystals having 10, 14 or up to 18 mols of water per mol of cyclodextrin, respectively. Also, the cavities of alpha-, beta- and gamma-cyclodextrin can hold up to 6, 11 or 17 mols of water per mol of cyclodextrin. The combined water of crystallization and water within the cavity can, theoretically, amount to 23%, 28% or 31% for alpha-, beta- and gamma-cyclodextrin. Attached herewith as Exhibit A are experimental data showing the increase of moisture content in cyclodextrin materials under typical manufacturing conditions. In view of the foregoing, a specific moisture content of the cyclodextrin as defined in claim 12 is not the result of coincidental pick up moisture (e.g., during processing), but needs to be specifically adjusted. It is respectfully submitted that Trinh does not disclose or suggest such adjustment.

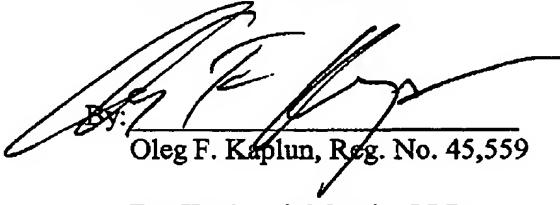
Claims 13-16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Trinh in view of U.S. Patent No. 5,776,842 to Wood et al. ("Wood").

As stated above, Trinh discloses adhering/attaching cyclodextrin to a fiber's surface as a coating after the fiber has been manufactured. It is respectfully submitted that Wood does not cure the above-described deficiencies of Trinh, because Wood suggests to coat the surface of a cellulosic fiber web with cyclodextrin-containing compositions. Thus, because claims 13-16 depend from, and, therefore include all of the limitations of claim 1, it is respectfully submitted that these claims are allowable.

CONCLUSION

In view of the above amendments and remarks, it is respectfully submitted that all the presently pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

  
Oleg F. Kaplun, Reg. No. 45,559

Fay Kaplun & Marcin, LLP  
150 Broadway, Suite 702  
New York, New York 10038  
Tel: (212) 619-6000  
Fax: (212) 619-0276

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